Amendments to the Drawings:

In the above-identified Office action, the examiner objected to the informal drawings filed with the instant application because Figures 1, 2 and 3 were crowded in one page and the indication "Fig. 6" was missing in the last drawing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required. In response, formal drawings, including Figures 1-6, in compliance with 37 CFR 1.121(d) are attached to this response. The replacement formal drawing sheets are labeled "Replacement Sheet" in the left corner of the top margin as required. Accordingly, the objection to the drawings should be withdrawn.

In preparing the flowchart of Figure 5 formally, the draftsperson needed two drawing sheets, which were labeled Fig. 5A and Fig. 5B, to comply with Patent Office drafting regulations. The Figures 5A and 5B collectively depict the same flow chart that was in the originally filed informal Figure 5. Paragraph 0017 of the specification was amended to reflect this change in the formal drawings. No new matter is being added to the application as a result of this change.

REMARKS

In the Office Action of March 2, 2006, claims 1-8 were rejected under 35 U.S.C. 103(a) as being unpatentable over the U.S. Patent No. 5, 113, 481, Smallwood et al. in view of U.S. Patent No. 5, 721, 969, Zimmermann et al. In addition, dependent claims 9-10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Smallwood et al. in view of Zimmermann et al. and further in view of WO 03/01348 using the U.S. Publication US 2004/0187035, Schwan et al.

In response, claim 1 was amended to render the recitation thereof more definite in particularly pointing out the invention intended to be claimed and dependent claims 2-6 were amended to render their recitation consistent with the amendments of their parent claim 1. Dependent claims 7-10 remain as originally filed. Applicant respectfully traverses the obviousness rejections of the amended and remaining claims 1-10 and offers the following arguments in support of its position.

Smallwood et al. is directed to an interpreter based augmentive communication system (ACS) to allow non-verbal handicapped individuals to communicate with others by manipulating a single switch (see col. 1, lines 20-25). In the embodiment presented, the ACS is being used in a wheelchair environment. The ACS includes an interpreter which permits therapist nonprogrammers to tailor user programs to the needs of the particular individual user in constructing words, phrases and sentences (see Abstract). A smart terminal (PC) is used to program the user programs into the ACS (see Fig. 1 and col. 5, lines 25-30). As noted by the examiner, Smallwood et al. do not explicitly disclose that the ACS stores programs for operating the wheelchair, i.e. drive and application programs. Accordingly, Smallwood et al. do not teach or suggest reprogramming drive and application programs of a wheelchair controller.

Zimmermann et al. is directed to control devices of automobiles and the reprogramming thereof. Such control devices serve to control certain parameters of the engine, gears, brakes . . . etc. of the automobile through control programs. Performance problems which may arise after the automobile is delivered to the customer may be solved by a reprogramming of the parameters of the control programs of these devices. Examples of such problems are disclosed in col. 3, line

50 to col. 4, line 4. Zimmermann et al. do not teach, suggest or make reference to powered wheelchairs or the controllers which control the operations thereof.

The examiner asserts that it would be obvious to a person of ordinary skill in the art at the time the invention was made to include the vehicle control programs in the non-volatile memory taught by Zimmermann et al. into the ACS of Smallwood et al. in order to achieve reprogramming a control program of the wheelchair. Applicant respectfully disagrees.

In order to combine references under 103(a), there must be a teaching or positive suggestion in one or the other of the references being applied against the claims that would motivate one to achieve the asserted system through the combination. Otherwise, the combination is improper. In the present case, the problem being solved by the ACS of Smallwood et al. is to permit reprogramming of non-volatile memory 66 the ACS 10 to tailor the ACS to words, phrases and sentences suitable to the particular user thereof. The examiner acknowledges that the programs of the non-volatile memory 66 are not being executed by the wheelchair controller 36 to operate the wheelchair. Thus, there is no teaching or positive suggestion in Smallwood et al. to reprogram the non-volatile memory of the ACS for drive and application programs of a wheelchair.

Problems that are recognized by Zimmermann et al. are correction of poor performance of an automobile which may arise after the automobile is delivered to the customer. These problems are solved in Zimmermann by a reprogramming of the parameters of the control programs of the control devices for the engine, gears and brakes of the automobile (see col. 3, line 50 to col. 4, line 4). Zimmermann et al. does not teach or positively suggest application of their solution to a power driven wheelchair. Accordingly, there does not appear to be a teaching or positive suggestion in either of the aforementioned references which would motivate one of ordinary skill in the art to combine the references for the purposes of rendering obvious the amended and remaining claims 1-10 of the instant application. For at least this reason, the combination of Smallwood et al. and Zimmermann et al. is improper.

For the sake of argument, suppose the combination for whatever reason is considered proper, the system resulting from the combination would be nothing more than an automobile which may include an ACS, the automobile including reprogrammable control devices to correct

for performance problems in the engine, gear and brake systems thereof, and the ACS including a memory programmable for tailoring the ACS to an individual driver/user as noted above.

In contrast, amended claim 1 recites, in substance, a reprogrammable, non-volatile memory programmed with a plurality of programs, including drive and application programs executable by the wheelchair controller to operate the wheelchair, a general-purpose computer programmed to reprogram the non-volatile memory while disposed at the wheelchair, the programmed computer for storing replacement programs for use in reprogramming said drive and application programs of the non-volatile memory, and wherein the wheelchair controller being operative to communicate with the programmed computer through the coupling means to reprogram the drive and application programs of the non-volatile memory with the replacement programs while the non-volatile memory is disposed at the wheelchair.

As explained above, neither Smallwood et al. nor Zimmerman et al., taken individually or in combination, teach or suggest the combination of elements of amended claim 1. More specifically, the programs of the non-volatile memory 66 of Smallwood do not store wheelchair drive and application programs executable by the wheelchair controller 36 to operate the wheelchair. Thus, the wheelchair controller 36 of Smallwood is not operative to communicate with the programmed computer to reprogram the wheelchair drive and application programs of the non-volatile memory with the replacement programs while the non-volatile memory is disposed at the wheelchair. Zimmermann et al. teaches a diagnostic system applied to an automobile which includes control devices for the engine, gears and brakes of the automobile. The Zimmermann system is operative to correct for poor performance of the automobile by a reprogramming of the parameters of the control programs of the control devices. There is no teaching or suggestion in Zimmermann of wheelchair drive and application programs and the reprogramming thereof. The ACS of Smallwood and the automobile system of Zimmermann are separate and distinct entities.

While the examiner has rejected dependent claims 2-6 as being obvious based on the combination of Smallwood and Zimmermann, he has not provided any prima facie evidence in support of his rejections. Instead, the examiner asserts that such limitations are well known and thus, unpatentable. Applicant respectfully disagrees. First, dependent claims 2-6 are patentable

because they include all of the limitations of their parent claim 1 which is patentable as noted above. Second, it is respectfully pointed out that such limitations, even if well known which has not been proven, are not recited in claims 2-6 in general, but rather as applied to the operation of a wheelchair controller. Applicant respectfully requests that the examiner provide prima facie evidence to support his rejection of claims 2-6 since the claims in question recite the operation of a wheelchair controller.

For example, claim 2 recites, in substance, that the wheelchair controller is operative to execute one of the programs of the plurality of programs stored in the non-volatile memory to determine if the drive and application programs of the plurality are acceptable for execution based on coded words stored in predetermined memory locations. Claim 3 recites that the one program is executed by the wheelchair controller upon being powered up. Claim 4 recites that during the execution of the one program, if the drive and application programs are determined to be unacceptable for execution, the wheelchair controller is operative to enter a wait loop waiting for reprogramming data from the programmed computer. Claim 5 recites that during the execution of the one program, if the drive and application programs are determined to be acceptable, the wheelchair controller is permitted to divert program execution to the drive and application programs stored in the non-volatile memory to operate the wheelchair. And, Claim 6 recites that during the execution of the drive and application programs, the wheelchair controller is operative to monitor if reprogramming data is being communicated thereto through the coupling means.

Neither Smallwood nor Zimmermann, taken individually or in combination, teach or suggest, the limitations recited in dependent claims 2-6. Accordingly, dependent claims 2-6 are also patentable independent of their parent claim 1. Dependent claims 7 and 8 are patentable at least because they include all of the limitations of their parent claim 1 which is patentable as noted above.

As regards the obviousness rejection of dependent claims 9 and 10, the examiner asserts that it would have been obvious to use the data lines of Schwan by the joystick of Smallwood for communicating data from an external device to the vehicle controller. Applicant respectfully disagrees. Neither Smallwood nor Zimmermann teach or suggest connecting their programming

PCs to the respective reprogrammable units through a joystick controller, but rather teach away from any such limitation by coupling their respective PC through the coupling EC 18 in Smallwood and the I/O circuit 15 in Zimmermann. Schwan teaches a block diagram schematic of a control unit with no apparent structure or physical units other than the encapsulated housing 2. Even the data lines 3 and 4 referenced by the examiner are nothing more than arrowed lines. The teaching of Schwan does not add anything of a material nature to affect the patentability of dependent claims 9 and 10.

Dependent claims 9 and 10 are patentable for at least the reason that it includes all of the limitations of their parent claim 1 which is patentable. In addition, dependent claim 9 recites that the coupling means comprises a joystick unit of the wheelchair and dependent claim 10 recites, in substance, that the wheelchair controller is coupled to the wheelchair controller through a charger port of the joystick unit for communicating reprogramming data with the wheelchair controller bit serially from a communication port thereof. None of the cited references against dependent claims 9 and 10, taken individually or in combination, teach or suggest such recited limitations.

New independent claims 21 and 26 are similar to amended claim 1 and are respectfully submitted to be patentable for at least the same reasons as claim 1. Claims 22-25 and 27-30 depend from claims 21 and 26, respectfully, and are submitted to be patentable for at least the reason that they incorporate the imitations of their respective independent claims.

For at least the reasons given above, Applicant respectfully requests that the rejections of the amended and remaining claims 1-10 be withdrawn and that they be reconsidered for allowance. In view of the above remarks, the instant application is considered in condition for

allowance and, thus, an early issuance thereof is earnestly solicited. If the Examiner believes that additional discussion or information is needed regarding this case, please contact the undersigned at the telephone number indicated below.

Respectfully submitted,

By: _____

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